

CLAIMS:

What is claimed is:

- SUB
B2
1. A method for the fabrication of a Schottky barrier diode on a SiC wafer, comprising the steps of:
 - (a) placing a mask having a window on a surface of the SiC wafer;
 - (b) depositing conductive material on the mask and exposed portions of the wafer surface;
 - (c) stripping off the mask so as to leave the conductive material deposited upon portions of the wafer surface; and
 - (d) implanting an edge termination layer to the wafer beneath the surface thereof but not beneath the conductive material.
 2. The method for the fabrication of a Schottky barrier diode on a SiC wafer as described in claim 1, further comprising the steps of:
 - (a) before placing the mask, forming an insulating layer on the surface of the wafer;
 - (b) applying the mask to the insulating layer; and
 - (c) etching away a portion of the insulating layer that is within the window to expose the SiC wafer therebeneath before depositing the conductive material.

9. A Schottky barrier diode, comprising:
- (a) a SiC wafer having a first surface;
 - (b) a conductive layer formed on a portion of the first surface;
and
 - (c) an edge termination layer implanted in the wafer so as to
reside beneath a portion of the first surface that is not
beneath the conductive layer.
10. The Schottky barrier diode as described in claim 9, further
comprising an insulating layer formed on portions of the first
surface not under the conductive layer.
11. The Schottky barrier diode as described in claim 10, wherein the
insulating layer is a low temperature oxide.
12. The Schottky barrier diode as described in claim 10, wherein the
insulating layer is a thermally grown oxide.
13. The Schottky barrier diode as described in claim 11, wherein the
low temperature oxide is silicon dioxide.
14. The Schottky barrier diode as described in claim 13 wherein the
thermally grown oxide is silicon dioxide.

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SILICON CARBIDE SCHOTTKY BARRIER
DIODE AND METHOD OF MAKING

15. The Schottky barrier diode as described in claim 9, wherein the
conductive layer is formed of a metal.
16. The Schottky barrier diode as described in claim 15, wherein the
metal is titanium.
17. The Schottky barrier diode as described in claim 9, wherein the
conductive layer has a thickness greater than a thickness of the
insulating layer.

ADD B5 >

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